

ID 116

Development of a low-alcoholic wine using pineapple waste materials, core and peel

T.G.P. Kumari¹, G.A.A.R. Perea¹, A.M.G.N. Rathnayake^{1*}, S. Geethanjali¹

¹Department of Export Agriculture, Faculty of Animal Science and Export Agriculture, Uva Wellassa University, Sri Lanka

Abstract

Belonging to the Bromeliaceae family and originating from South America, pineapple (*Ananas comosus*) is a widely consumed fruit that is used both as a raw fruit and extensively processed in various food products such as jam, juice, jellies, fruit pulps, wine, and vinegar. However, commercial food production that uses pineapple generates a considerable amount of waste, including the core and peel, which are often discarded. Despite being discarded, the core and peel of the pineapple are known to be rich in essential nutrients such as potassium, calcium, vitamin C, manganese, and fiber, highlighting their potential as a valuable resource that could be utilized in numerous applications. This study has been carried out to develop low-alcoholic wine using pineapple peel and core considered waste materials. Five wine samples were prepared using different combinations of pineapple peel and core: 100% peel, 100% core, 50% peel with 50% core, 75% peel with 25% core and 25% peel with 75% core. All the samples were kept for 21 days in room temperature for fermentation and evaluated for alcohol concentration, Brix value, pH, titratable acidity and sensory characteristics. According to the sensory evaluation, the best sensory attributes for aroma, taste, sweetness, color, clarity, mouth feel, alcohol strength and overall acceptability were shown in wine which was prepared using 100% pineapple core. In all wine samples, the alcohol concentration was between 3.0 - 4.5% (v/v), and there was no significant difference ($p > 0.05$) in the alcohol percentage of all five wine samples. Further, there were no significant differences in pH (3.7 - 3.9), titratable acidity (0.2 - 1.3%) and Brix value (2.0 - 2.5) across all wine samples. This study demonstrates that low-alcoholic wine can be prepared using pineapple core and peel as waste material, but the wine prepared using pineapple core exhibited good sensory properties.

Keywords: low alcoholic wine, pineapple core, pineapple peel, pineapple waste

***Corresponding Author:** grathnayake8@gmail.com